



Pecan Street Project Inc Energy Internet Demonstration

Project Description

Pecan Street Project is developing and implementing an Energy Internet at the 711-acre Robert Mueller mixed-use development in Austin, Texas. Smart Grid systems that form the foundation of this project include automated meter information, 2-way meters, energy control gateways (a home network system that links to a customer web portal), advanced billing software, and smart thermostats. These technologies will be integrated into a microgrid that links 1,000 residential meters, 75 commercial meters, and plug-in electric vehicles (PEV). At least 100 of the residential meters will have rooftop solar photovoltaics (PV), including 15 or more affordable residences. The project will also integrate 200 residences with smart water and smart irrigation systems. Different storage technologies will be tested including thermal storage, battery technologies (e.g., lithium-ion, lithium iron magnesium phosphate, metal air, and lead acid), and possibly ultracapacitors and fuel cell systems. Distributed generation technologies integrated into the Energy Internet include solar PV (crystalline silicon and thin film), solar water heaters, and absorption chillers. Through the use of Pecan Streets' two-way energy flow, customers can set electricity and water budgets, have software manage electricity use of individual appliances, and sell energy back to the grid; cars connected to the grid can be powered with solar energy and help level loads; and utilities can store power and deliver it when needed,

Goals/Objectives

- ***Move toward an efficient zero net carbon community while creating green collar jobs, cost effectively expanding the use of clean energy, and providing customers with greater control over their electric usage and environmental impact while saving money***
- ***Create plug-and-play open deployment platforms for new technologies and electricity services***
- ***Promote replicability and scalability***
- Lower peak demand, transmission and distribution costs, capital expenditures, power interruption costs, and water usage cost

Key Milestones

- Smart water meter installation completed (2011)
- Utility-owned energy storage connected to PEV smart charge-linked solar deployment (2012)
- Smart appliance installation completed (2013)

Benefits

- Lower electricity cost
- Greenhouse gases reduced
- Power quality improved
- Dependence on foreign oil reduced



CONTACTS

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PARTNERS

Austin Energy (part of City of Austin)
National Renewable Energy Laboratory
Environmental Defense Fund
University of Texas at Austin

PROJECT DURATION

2/11/2010–2/10/2015

BUDGET

Total Project Value
\$24,657,078

DOE/Non-DOE Share
\$10,403,570/\$14,253,508

EQUIPMENT

In-home displays
Smart thermostats
Smart water meters
Smart meters
Smart appliances
Batteries
Electric vehicles
Solar panels

DEMONSTRATION STATES

Texas
CID: OE0000219

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U.S. DEPARTMENT OF
ENERGY

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American Recovery and Reinvestment Act
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Smart Grid Demonstration Program

